Insurance and financial stability

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The major shocks that hit the insurance sector have raised questions as to the role of this sector in financial stability and as to whether it is a potential source of systemic risk. The complexity of financial conglomerates, risk transfers and reinsurance have intensified these preoccupations. From an in-depth analysis of both its characteristics and empirical data on possible contagion from this sector, we can conclude that the insurance sector does not appear to be a source of systemic risk for the economy. Nevertheless, it may be a source of destabilising shocks for both the financial sector and the economy as a whole. The emergence of financial conglomerates, the transfer of a significant share of credit risk to the insurance sector and the particular role taken on by the reinsurance sector do not alter this conclusion. Its potential to destabilise the financial system clearly justifies the regulation of this sector and, in particular, the monitoring of the solvency of insurance companies. Nonetheless, the insurance sector's long- to very long-term horizon not only calls for specific rules but also rules that are sufficiently flexible to adapt to changing circumstances. Such regulation would allow the insurance sector to fulfil its expected role as a shock absorber.

While, until a short time ago, the insurance sector had not been a focus of attention for institutions charged with guaranteeing financial stability, a number of questions have recently arisen. Indeed, the following issues have led experts to consider the new role played by the insurance sector in the major economic and financial balances: the overreaction of insurance stocks during the equity market slump, airline stoppages in the wake of the terrorist attacks on the World Trade Center, the discovery of the strategic role of reinsurance in the sustainability of risk coverage, the growing influence of financial conglomerates, the transfer of credit risk from the banking sector to other sectors such as the insurance and reinsurance sectors, and the temporary or long-term doubts about certain types of coverage. Against this backdrop, it is natural to reflect on the potential risks posed by the insurance sector to national and international financial stability.

In Part One, we will assess the extent to which the insurance sector may be a source of systemic risk. In Part Two, we will examine in greater detail a number of recent phenomena that have affected the insurance sector and that may constitute new sources of financial risk. In Part Three, we will consider the State's role in the stability or instability of the insurance sector.

1| INSURANCE, SYSTEMIC RISK AND FINANCIAL STABILITY

From the financial stability perspective, it is important to evaluate the extent to which the insurance sector, like the banking sector, represents a potential source of systemic risk, and the likelihood of it triggering a liquidity crisis. In the banking system, systemic risk refers to a default that, initially confined to a few institutions, then spreads to the whole financial sector, irrespective of the solvency of the institutions concerned and, finally, may lead to the collapse of payment systems or a general economic crisis.[1] The shockwave propagates through interbank lending and banks' lending to companies, without which the financing of the economy and, by extension economic activity, would be interrupted. Systemic risk should not be confused with a general shock affecting all banks simultaneously and jeopardising their solvency, *e.g.* an interest rate shock, an inflationary shock or a stock market shock. The contagion involved in systemic risk may to a great extent be psychological, given that agents, in a world of imperfect information, simply interpret the failure of the first banks as a threat to other banks, which results in a loss of confidence in them. The extent of contagion cannot be predicted and may become self-fulfilling.[2] While the initial default may merely be a "solvency crisis", the propagation of the crisis through contagion becomes a "liquidity crisis", as agents lose all confidence in the system.

On examination, the insurance sector does not appear to be a source of systemic risk. This does not mean that it has not been subject to crises, or that insurance companies are immune to macroeconomic shocks. Neither does it mean that contagion from this sector to other sectors, in particular the banking sector, does not exist, as has been observed in "extreme situations". But insurance contagion has never reached the same scale as bank contagion and its transmission channels have not been clearly identified, insofar as they tend to differ from one crisis to the next.

1|1 Absence of systemic risk in the insurance sector

There are no known cases of the bankruptcy of an insurance or reinsurance company resulting in a macroeconomic crisis. The only such case was in Jamaica in 1996. However, this incident was due to the fact that the insurance company in question belonged to a banking conglomerate with a monopoly on the local market rather than to a systemic risk inherent to the insurance sector. We can therefore assume that the economy is less exposed to "systemic risk" from the insurance sector than from the banking sector. There are four main reasons for this.

• *The production cycle in the insurance sector is opposite to that of the banking sector*. In the banking sector, loans make deposits: the liquidity that banks inject into the economy, in the form of loans, does not reflect past wealth creation but only the expectation of future wealth creation. However, in the insurance sector, "deposits" can be said to make "loans": the liquidity that insurance companies inject into the economic system simply transfers liquidities resulting from wealth already created by the insured. Consequently, at the macroeconomic level, the bankruptcy of an insurer only consolidates a reallocation of capital and wealth at the expense of the insured. This reallocation was implicit but not perceived before the bankruptcy, whereas the failure of a bank directly limits the potential for future wealth creation.

• *The liability turnover rate is lower in the insurance sector than in the banking sector*. The short-term liquidity of bank deposits is vital because they are used by agents in their everyday operation, whereas that of insured parties' claims on insurance companies is only necessary for a subset of these claims. In the non-life insurance sector, liquidity requirements arise from claims that are, theoretically, independent of the behaviour of the insured. However, in the banking sector changes in deposits always result from deliberate actions. In the life insurance sector, amounts invested by clients are just as stable as those deposited by customers of banks, but for very different reasons: the stability

[1] *See de Bandt and Hartmann (2000).*
[2] *As W. Bagehot (1873) wrote:* "Every banker knows that if he has to prove that he is worthy of credit, however good may be his argument, in fact his credit has gone".

of bank deposits results from the fact that inflows tend statistically to offset major outflows whereas the stability of life insurance is simply contingent on the weakness of outflows.

• *Insurance claims are less liquid than bank deposits.* Depositors may withdraw funds from banks at any time without notice, without being subject to a financial penalty or taxation. In the case of insurance investment, however, the possibilities of withdrawal are more limited and more costly for the customer. Withdrawal is almost impossible in the case of non-life insurance. Early withdrawal is possible in life insurance and bears certain similarities to the withdrawal of bank deposits, but the scale and scope are limited due to three following dissuasive mechanisms: the penalties generally applicable in favour of the insurer (in France, they may be as much as 5% of the contract's value); the loss of tax breaks usually associated with this type of contract in Europe (in France, withdrawal before the end of the eight-year period results in a much higher taxation of interests than the 7.5% flat rate applicable after eight years); the time period for the actual recovery of funds invested, which prevents immediate withdrawals (in France, the insurer has two months to repay the redeemable value of the contract).

• *The network of interdependencies is much less dense in the insurance sector than in the banking sector*. Aside from equity ties in the framework of groups and financial conglomerates, which we will discuss further on, the financial relationships between insurance companies and other financial institutions are much less dense than those of banking organisations and mainly concern the reinsurance and asset management sectors. In the insurance sector, there are no similarities to the extremely dense and shifting network of interbank lending that is a source of fragility specific to credit institutions. Stripping out savings-related premiums in order to only take account of insurance risk premiums, the share of premiums – and hence of risks – ceded by insurers to other insurers or reinsurers only amount to, at most, 13% of the total (see SwissRe, 2003).

Consequently, during the property slump at the end of the 1980s and the start of the 1990s the insurance sector, contrary to the banking sector, did not hurriedly sell off its assets. During Japan's crisis in the 1990s, insurers were able to continue contributing to the liquidity of the economy for ten years before experiencing major difficulties, whereas banks ran into serious difficulties at the start of the crisis and weighed on the national economy throughout the decade, despite the massive support from monetary policy and fiscal stimuli.

1|2 Absorption, creation and amplification of economic shocks by the insurance sector

Financial stability is not limited to the question of systemic risk. The insurance sector may also contribute to financial stability or instability through its capacity to absorb, create or amplify macroeconomic shocks. Measuring this capacity is less a theoretical question than an empirical one. Unfortunately we do not possess the economic data necessary to robustly test this capacity. The only data that might allow us to carry out such tests, at least partially, are stock market data. Without reiterating efficient market theory, we can state that these data contain much relevant and up-to-date information. Consequently, we observe, for example, that these data constitute fairly good leading indicators of US banks' performance compared, in particular, with bank supervisors' assessments.[3] Similarly, we might expect that they offer good indications of the performance of insurance companies. These data can probably not however offer reliable information on bankruptcy risks and systemic risks given that these risks have a bearing on the limited liability of shareholders and the intervention of guarantee funds that skew the market's assessment of companies' net assets.

In this study we use stock market data to evaluate the extent to which shocks occurring in the insurance sector spread to the rest of the economy and, conversely, how shocks in the rest of the economy affect the insurance sector. This assessment is carried out by comparing these results to those obtained in the same conditions for the bank sector. In this way, we can gain some insight into the scale of both the contagion and absorption of shocks by the financial sector. Such an exercise naturally vastly over simplifies the reality and reduces contagion to past relationships between variables.

[3] *See Berger (A.), Davies (S.) and Flannery (M.) (2000), and, Gunther (J.), Levonian (M.) and Moore (R.) (2001).*

For exploratory purposes, and without claiming to exhaust the possibilities of econometric analysis, we present below the results of an empirical study on the interdependencies between the financial sector – broken down into two sub-sectors (insurance and banking) – and the macroeconomic environment, represented here as the aggregate economy and monetary policy. The insurance sector, the banking sector and the aggregate economy are represented by the stock market indices of the corresponding sectors and of the market as a whole. Monetary policy, which we used in the study due to its independence, is represented by the three-month interest rate. The data used are the daily DJ EuroStoxx indices and three-month interest rates of the euro area over the past fifteen years (1989-2004). Data were obtained from the Ecowin database. Note that the gap between the logarithm of the index and its trend was used instead of observed data. This transformation makes it possible to strip out the trend, which is not being studied here, from the measure of volatility. We thus obtain series whose interdependence can be measured using vector-autoregression (VAR) models, in which each dependent variable is a function of past values of itself and of other variables.

The residuals of these equations are then decomposed into basic shocks that affect each of the four variables and that are therefore specific to them in that they are not the product of the behaviour of the other variables. The shocks specific to three-month interest rates are broadly determined by monetary policy. The shocks specific to the stock market index represent shocks common to the economy as a whole, excluding monetary policy. The shocks specific to stock market indices of the banking and insurance sectors correspond to shocks common to each of the two sectors, excluding monetary policy shocks and shocks common to the economy as a whole.

We then use the estimated equations and the decomposition of their residuals to simulate the consequences of the four shocks specific to the four variables in question. We carried out two types of simulation. The first reproduced the series for 1989-2004 to calculate the contribution of each of the four shocks to the changes in the four variables during the period. A fifth variable was added to four variables presented below representing the price of a number of major European insurance companies (3) and banks (3) in order to estimate the average impact of the specific shocks to these companies taken individually. The second type of simulation uses the Monte-Carlo method to make, for each period, a random draw of shocks and calculate, on this basis, the uncertainty margin for the contribution of these shocks to the fluctuations of the four variables, first for a short period of around six months and then for a longer period of around four years. We can thus test the impact of the most extreme shock scenarios.

Table 1 sums up the findings of the first type of simulation, *i.e.* historical simulations. It shows that over the past fifteen years insurance companies have absorbed more economic shocks than they have produced, and that they differ in this respect from banking institutions:

• the percentage of historical volatility in the price of companies taken individually explained by specific shocks to these companies was much lower in the insurance sector than the banking sector;

• the percentage of historical volatility explained by shocks common to the sector as a whole remained low in both financial sectors; this confirms the difficulty in predicting the occurrence of a systemic risk using stock market data;

• insurance companies, contrary to the rest of the stock market, were less affected by shocks common to banks than banks were by shocks common to insurers;

• insurance companies and banking institutions were more affected by shocks common to the whole of the market than by interest rate shocks, the former however showed greater sensitivity to interest rate shocks than the latter.

Table 1
Breakdown of the variance in prices
(as a %)

Percentage attributable to shocks	Insurance companies	Banking institutions	The market as a whole
Specific to companies	13	25	12
Common to the insurance sector	12	9	10
Common to the banking sector	2	5	4
Common to the market	42	50	37
Short-term interest rate shocks	31	11	37

Lecture: on average, 13% of the historical variance of the insurance companies studied is imputable to shocks specific to these companies.
Sources: Ecowin and author' calculations

Charts 1 and 2 show the results of the second type of simulation, *i.e.* Monte-Carlo simulations of random shocks over six months (Chart 1) and four years (Chart 2), in a confidence interval of 99%. In line with the historical simulations, these charts show that the extreme shock scenarios associated with the macroeconomic environment exhibit a greater potential to destabilise the insurance sector than the banking sector. However, contrary to the historical simulations, they show that the extreme shock scenarios associated with the insurance sector are potentially less destabilising for the market than those linked to the banking sector and that the banking sector may be more destabilising for the insurance sector than *vice versa*.

1|3 Complex interdependencies between the insurance and banking sectors

The relationships between the insurance and banking sectors require particular attention especially since the stock market data studied above yield an apparently contradictory result. On the one hand, over the period 1989-2004, insurance companies were less affected by shocks common to the banking sector than *vice versa* and, on the other hand, the banking sector seems to exhibit a greater destabilisation potential for the insurance sector than *vice versa*.

This apparent contradiction must be clarified. A study by De Nederlandsche Bank allows us to do so (see Minderhoud, 2003). The conclusions of this study are based on a series of Monte-Carlo simulations using stock market data on the largest US, UK and German banks and life insurance firms. The banks chosen are barely or not at all active in the insurance sector. The study shows that the probability of significant contagion from the insurance sector to the banking sector increases sharply in extreme situations. In this study, contagion in extreme situations is defined as the fraction of the extreme co-movements of bank stock returns attributable to the extreme co-movements of insurance stock returns, *i.e.* those which correspond to the 5% of the largest co-movements.

In particular, it shows that the probability of an extreme movement of bank stock returns increases with the number of extreme movements of insurance stock returns. For example, in the United States, the probability of an absence of extreme movement of bank stock prices was 90% when no extreme movements of insurance stock prices were observed. However, when four or more extreme movements of insurance stocks were observed, this probability plummeted to 10%. Given that macroeconomic variables do not have such marked effects during the corresponding periods, this suggests that there is contagion from the insurance sector to the banking sector.

This result must however be interpreted with caution in that it uses a strictly statistical definition of causality while it is difficult to determine the channels through which contagion is transmitted, above all to banking groups that do not own insurance companies. At this stage, there nevertheless remains the possibility that contagion effects exist, which calls for vigilance on the part of the financial authorities regarding the situation in the insurance sector.

2| NEW POTENTIAL SOURCES OF FINANCIAL INSTABILITY

Concerns that have recently emerged focus less on insurance itself, which does not, as we have seen, pose risks of structural instability, than on the links between the insurance sector and the banking and reinsurance sectors. In this regard, attention has particularly centred on financial conglomerates and credit derivatives. These concerns are examined below.

2|1 Financial conglomerates

Financial conglomerates offer a number of activities within the same group, typically banking, insurance and investment services. Most banking and insurance groups have developed their own financial services arms to manage the large revenues they generate. But, this is not a major concern for financial stability, especially in the case of insurance groups. However, the same cannot be said of the increasing links between the banking and insurance sectors that have characterised the past 20 years. The bancassurance sector has grown rapidly in France, where banking groups have acquired insurance subsidiaries. More

Chart 1
Effects, over 6 months, of series of stochastic shocks specific to each of the variables studied on respective values of these variables

Responses from interest rate ...

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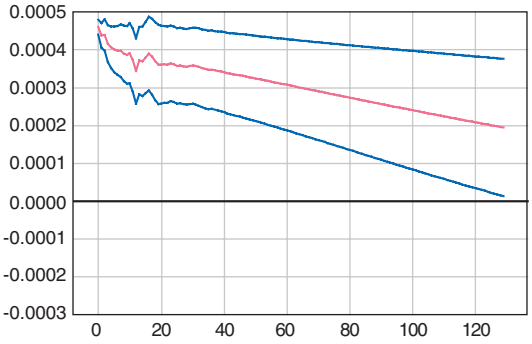

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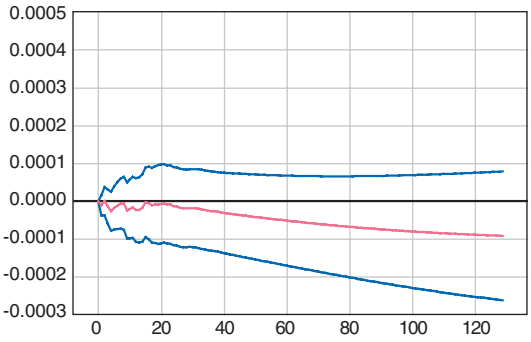

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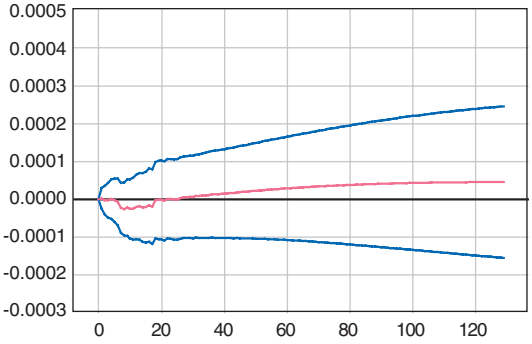

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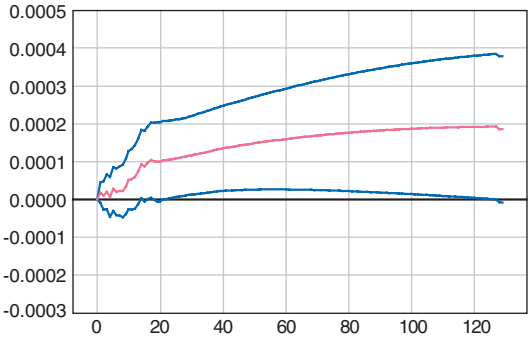

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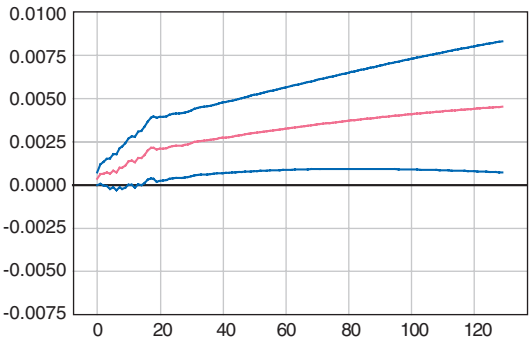

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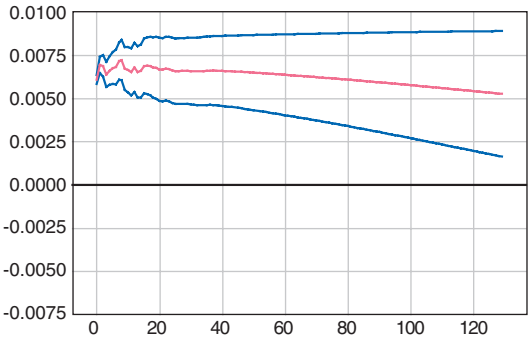

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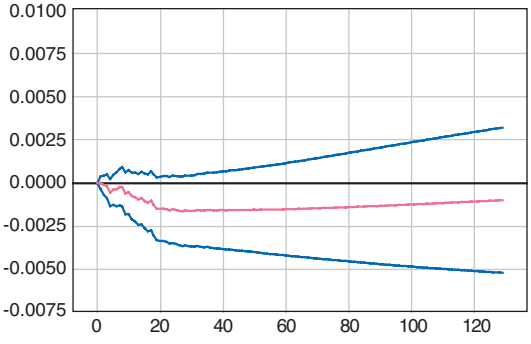

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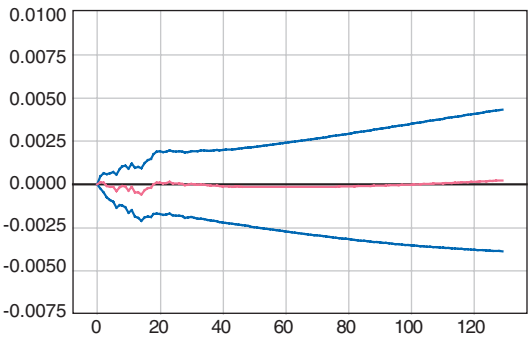

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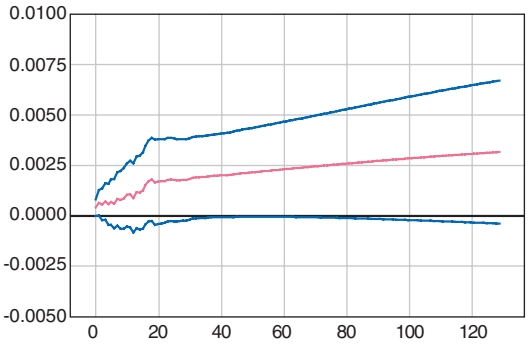

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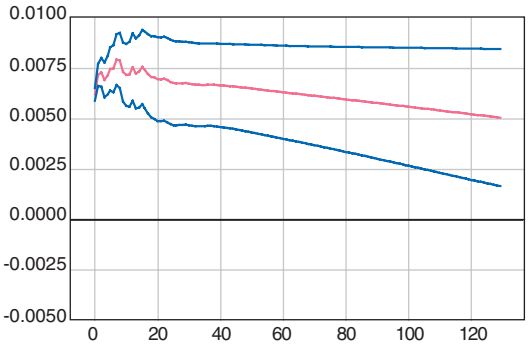

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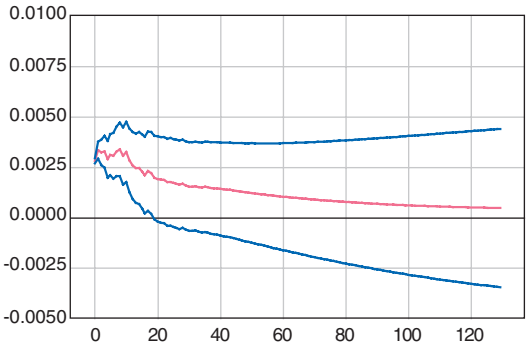

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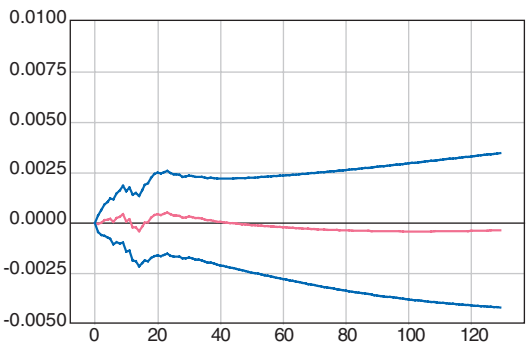

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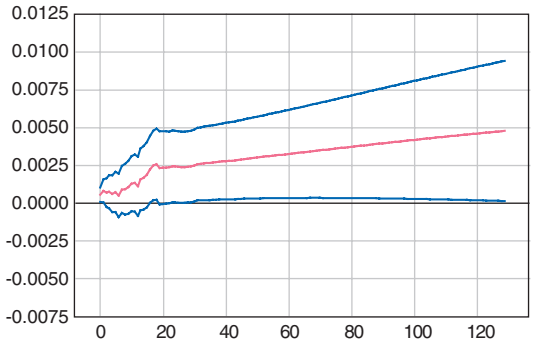

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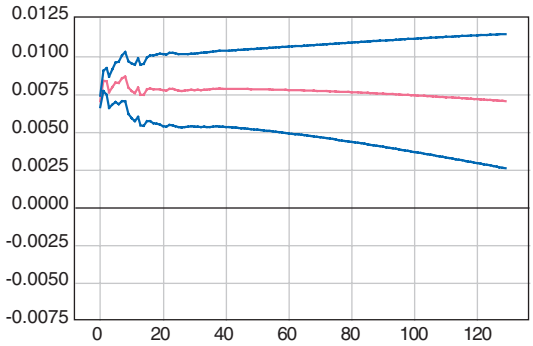

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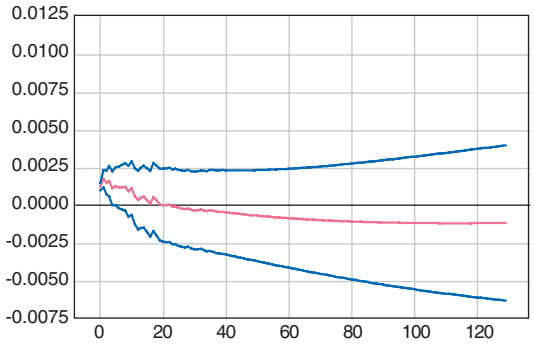

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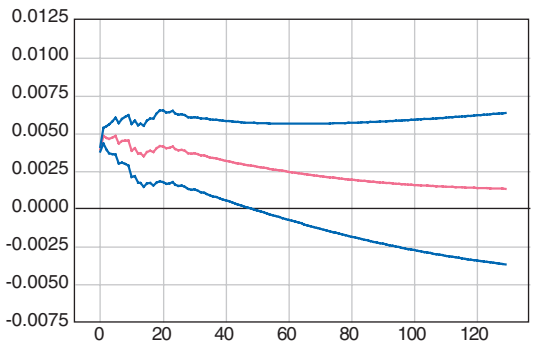

Interpretation: the central curve shows the average of the scenarios while the extreme curves bound the interval in which 99% of the scenarios are situated. The level of the curves and their spread at the end of the period give an idea of the potential for short-term destabilisation associated with the shocks in question. Interest rate shocks are more destabilising for the insurance sector (level: 0.009 - spread: 0.009) than for the banking sector (level: 0.007 - spread: 0.007).
Sources : Ecowin and author's calculations

Chart 2
Effects, over 4 years, of series of stochastic shocks specific to each of the variables studied on respective values of these variables

Responses from interest rate ...

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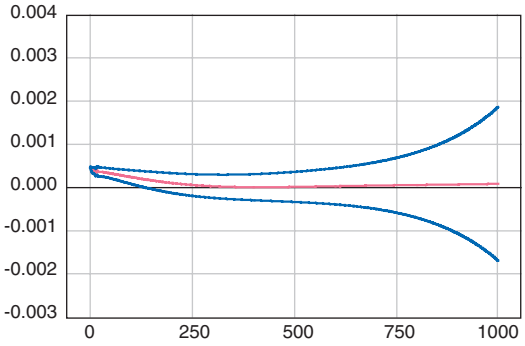

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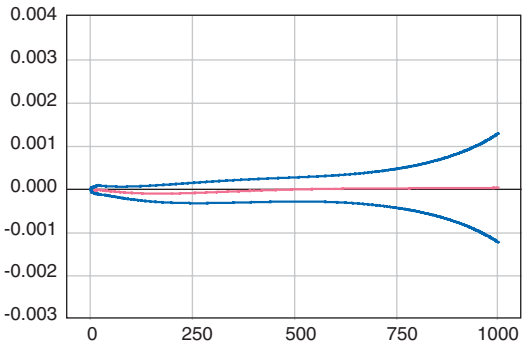

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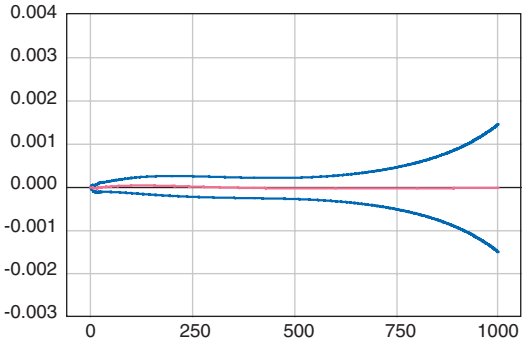

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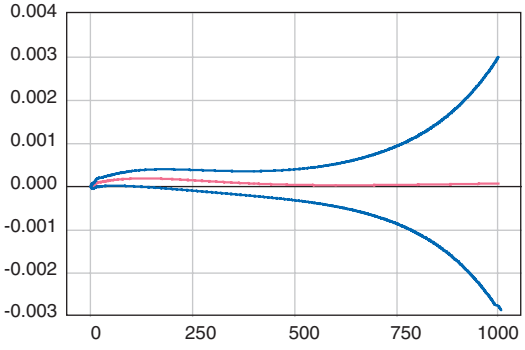

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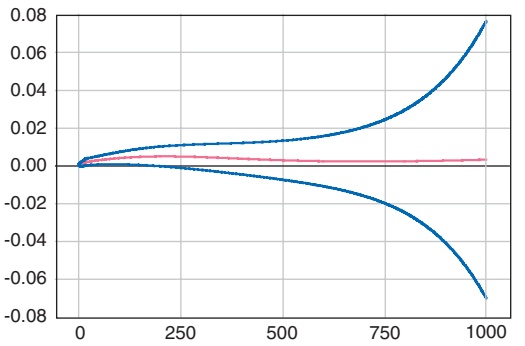

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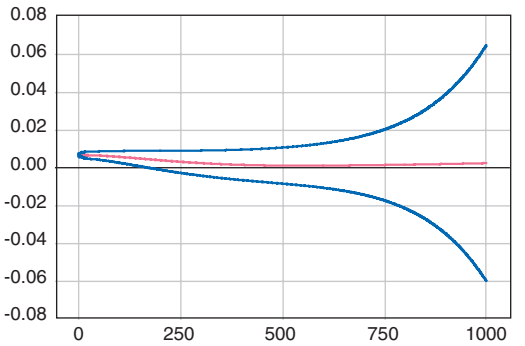

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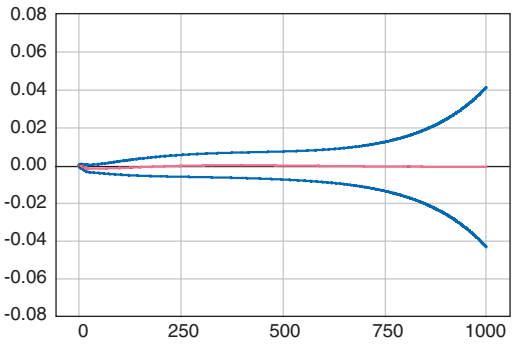

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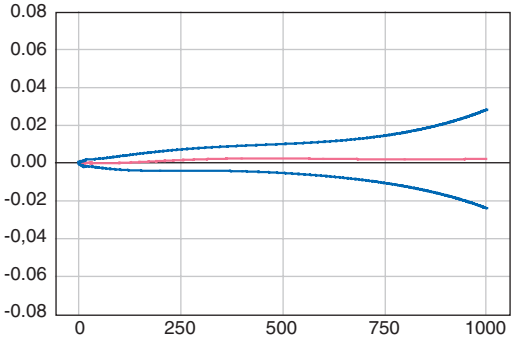

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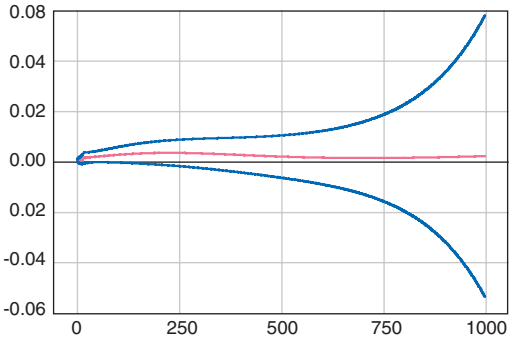

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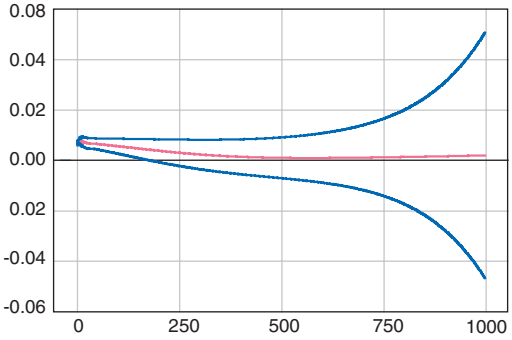

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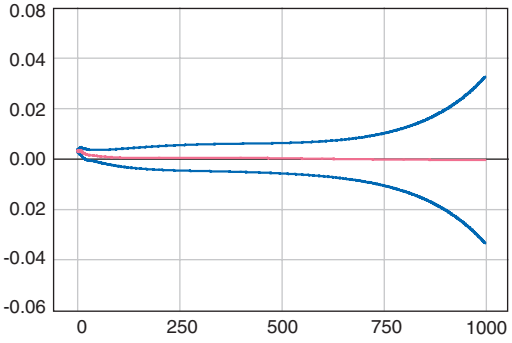

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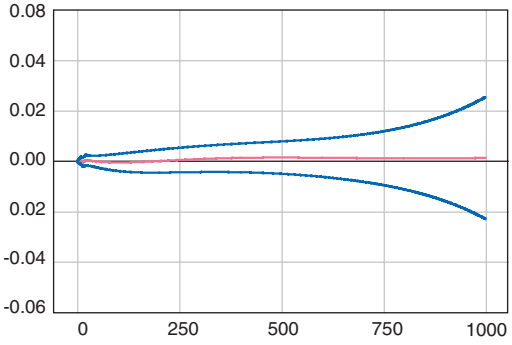
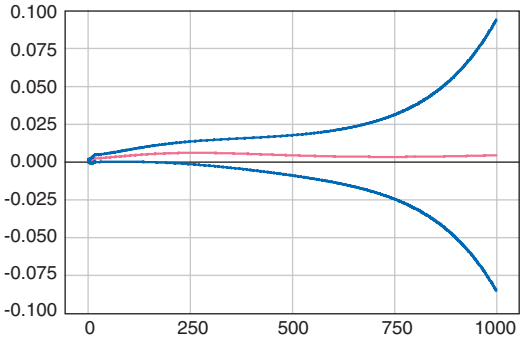
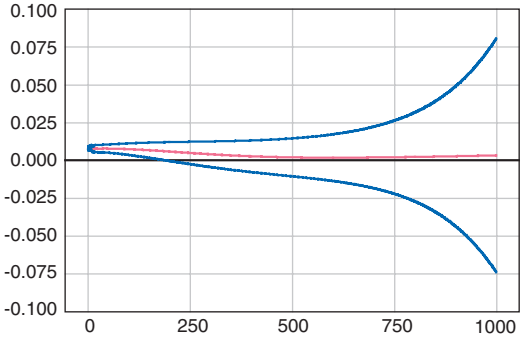


Responses from insurance sector ...

... to the shock from interest rate



... to the shock from EuroStoxx



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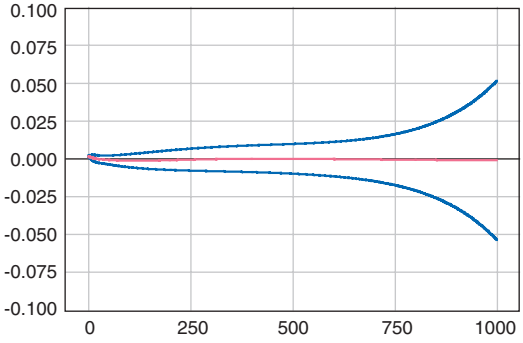
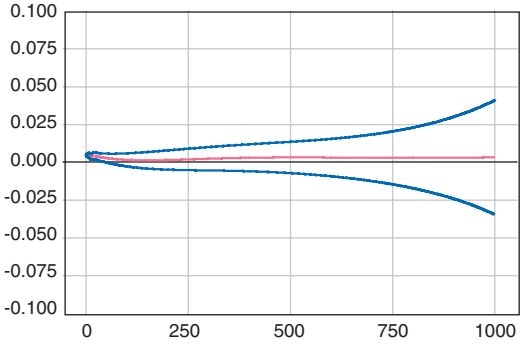


... to the shock from insurance sector



Interpretation: the central curve shows the average of the scenarios while the extreme curves bound the interval in which 99% of the scenarios are situated. The level of the curves and their spread at the end of the period give an idea of the potential for destabilisation associated with the shocks in question. Interest rate shocks are more destabilising for the insurance sector (level: 0.09 - spread: 0.18) than for the banking sector (level: 0.06 - spread: 0.12).
Sources Ecowin and author's calculations

recently, however, Germany saw the opposite development, with the insurance group Allianz acquiring a major bank subsidiary. These closer links between the insurance and banking sectors have raised concerns among a number of decision-makers as to problems stemming from the insurance sector that could, in view of these links, spread to the banking sector and thus jeopardise financial stability, or even take on a systemic dimension. Furthermore, the fact that, to date, such a risk has not materialised does not mean that we can assume that it does not exist given that this rapprochement between the sectors is too recent a phenomenon for all the consequences to be correctly assessed.

At first sight, it might be thought that financial conglomerates, in particular bancassurance, would tend to reduce the risks of financial instability in that they allow banks to diversify their activities. This diversification can foster economies of scale and above all new technical and commercial opportunities, which can only be beneficial for financial stability. In particular, it gives rise to (see Boot, 2003):

• a more efficient use of information technologies (compilation of more comprehensive and coherent databases, etc.),

• a rationalisation of distribution networks (development of multichannel strategies combining bank and agent networks, capitalising on reputation effects, etc.),

• a greater potential for financial innovations (reduction of fixed costs of innovation, transfer of financial technologies between the different branches of the group, etc.),

• a cultivation of complementarities (a broader range of savings products, development of an internal capital market, a greater asset management potential, etc.),

• a reduction of the group's overall risk (a lower degree of correlation between risks when diversifying into very different areas).

However, despite this potential for reducing costs, conglomerates do not always seem to be able to achieve these gains. Firstly, conglomerates generate specific costs that should not be overlooked (see Boot, 2003). In particular, they give rise to costs relating to different corporate cultures as well as inefficiency costs arising from poorly-exploited cross-subsidy opportunities in favour of non-profitable activities. Moreover, the potential for reducing costs discussed above may be hampered by the long-term fixed costs that are synonymous with information technologies, the management of networks and the transfer of technology. Lastly, when groups increase their size and diversify their activities, they do not necessarily reduce their risks:

• risk reduction is minimal at the conglomerate level compared to the disaggregated level given that only three risks can be diversified[4] (insurance, banking and investment services), two of which are relatively highly correlated and the other, corresponding to the core activity, accounts for the majority of the group's risk (often over 80% of the total); typically only a reduction of around 5%-10% can be achieved at most (see Kuritzes *et alii*, 2003), and close to 10% would be reached in the case of a merger between a bank and an insurance firm given that credit risk has a low degree of correlation with insurance risk;

• the increased complexity of managing conglomerates, associated with the difficulties in implementing efficient management and control procedures, constitutes in itself an additional source of risk (see Winton, 1999); the consequences may be exacerbated by contagion associated with reputational risks (see Cumming and Hirtle, 2001) and by the fact that conglomerates are not only supposed to be "too big to fail" but also "too complex to fail" (see Herring, 2002).

All in all, conglomerates reduce risks more often than they amplify them. This is due less to the economies of scale, which appear limited, than to the new technical and commercial opportunities that such structures procure as well as to the lower degree of correlation of the risks between the insurance and the banking sectors, for both life and non-life sectors.[5] However, as we saw in Part One, the low degree of average correlation between bank risks and insurance risks does not rule out a "recorrelation" of these risks at the expense of the banking sector in extreme situations.

[4] *Note that this result stems from the fact that the value of standard deviation* $\sigma/\sqrt{N}$ *decreases with the number N of independent risks included in the portfolio of activity X.*

[5] *See Boot (A. W. A.) (2003), Kuritzes (A.)* et alii *(2003), Beitel (P.) and Schiereck (D.) (2001).*

The insurance component of financial conglomerates does not in itself pose risks of structural instability for conglomerates. The supplementary supervision of conglomerates, provided for in the 2003 EU Council Directive of the European Parliament and of the Council, thus appears to be sufficient at present, on the condition that it is implemented in a coordinated and consistent fashion in order to control any risks emanating from the insurance sector.

2|2 Credit derivatives

In 2001, the Bank of England, in an article in its *Financial Stability Review*, drew attention to the transfer of credit risk from banks to insurance companies, under conditions that are not necessarily well controlled (see Rule, 2001). Naturally, the article did not focus on insurance companies' traditional investment activity, which exposes them to significant credit risk. In France, 50% of insurance companies' assets are invested in corporate securities: 23% in equities (of which 1.5% in non-listed shares of companies outside the insurance sector) and 27% in corporate bonds. French insurance companies therefore account for a significant share of the markets in question: 40% of corporate bond holdings, 6% of listed share holdings and 3% of unlisted share holdings. Figures are broadly similar for the euro area. The article did not focus either on protection purchased by insurance companies against credit risk. These purchases enable such companies to protect their assets. Instead, the article centred on the protection sold by insurance firms.

At the global level, insurers are significant net protection sellers: they account for 33% of protection sold compared with just 8% of the demand for protection in 2002.[6] Half of the protection sold was offered by US "monoliners" specialised in municipal bonds, while reinsurers only account for 12% of the protection sold in the sector (see Fitch Ratings, 2003). Most of the transactions (92%) took the form of cash or synthetic CDOs (collateralized debt obligations) and were mainly carried out in the United States (76%) (see Fitch Ratings, 2003).

The participation of insurers and reinsurers in this market as protection sellers simply draws on the skills they have acquired as investors both in terms of analysing corporate bond spreads and equities. Their expertise lies both in assessing credit risk and valuing credit derivatives, thanks, in the case of the latter, to their proficiency in the area of yield spreads. Moreover, by acquiring credit risk, insurers diversify their risks, in the knowledge that credit risk has a low degree of correlation with insurance risk. Most of them also enhance their sound financial positions and good ratings.

However, the transfer of credit risk from banks to insurance companies has certain characteristics that may suggest that high or poorly-controlled risks exist:

• risk transfer is concentrated among few players, *i.e.* between fifteen to twenty in the world (in France, a single player accounts for most of the market's capacity);

• insurers and reinsurers are linked by the spiral of retrocessions typical of such transactions, as well as by collateral mechanisms, under conditions that resemble those of interbank lending;

• the ISDA master agreement, which effectively governs the OTC derivatives market, contains a close-out netting provision that authorises the non-defaulting party to unwind its positions with the parties associated with the defaulting party; this provision may be dangerous for the rest of the market if its application results in large-scale sales of illiquid collateral in periods when prices are falling sharply (see Herring, 2002);

• the main players, which account for two-thirds of market supply, either hardly diversify their risks (monoliners), or are little or not at all regulated (in particular reinsurers in Bermuda), which may encourage regulatory arbitrage; more fundamentally, the off-balance-sheet nature of these transactions has largely contributed to their opacity and to the fears they have sparked.

Nevertheless, the practical consequences of these risks should not be overstated:

• when insurers and reinsurers buy credit risk they are extremely selective: at the global level, in 2002, 57% of credit risk purchase was rated AAA (compared with 22% for the market as a whole) and only 4% was below investment grade (compared with 8% for the market as a whole) (see Fitch Ratings, 2003);

[6] *See British Banker's Association (2002).*

in France, 78% of the risk purchased was AAA or AA while 10% was rated investment grade or below;[7]

• the exposure of insurers and reinsurers to credit risk only accounted for 0.06% of annual premiums worldwide in the sector in 2002[7]; it should also be noted that in 2003 major insurers and reinsurers reduced their positions;

• more fundamentally, credit risk transfer spreads this risk and, in doing so, reduces the risks of financial instability even if we assume that protection sellers are not as sound as we may wish. It nonetheless constitutes an additional barrier to the propagation of shocks associated with credit risk;

• regulatory arbitrage remains, to date, a fairly limited phenomenon;[7] on the one hand, in Europe, the sale of credit protection by insurers is only just tolerated (in France, it only accounts for 13% of banks' net buying position),[7] and, on the other hand, reinsurers are regulated in the United States and are set to be in Europe.

Basically, we cannot ignore the fact that credit risk, before being transferred from banks to insurance companies, is generated by banks through their lending to companies. This risk then circulates in the economy *via* transfer mechanisms, without it being either amplified or reduced. Consequently, the problems raised from the transfer of credit risk from banks to insurance companies stem from elsewhere:

• firstly, they result from the illusion of immunity that transfers can give to banks, which might then underestimate the counterparty risk they take on;

• for a long time, emphasis has been placed on accounting presentation rather than the quality of the transfers. Assessing their quality is however essential for measuring the soundness of banks.

Work must focus on the above areas. To achieve progress in these areas, more information must be gathered than is currently at our disposal in order to gain a more comprehensive and clearer understanding of risk. The supervisory authorities have started to do so at the microeconomic level and must now extend their work to the macroeconomic level. More comprehensive and more frequent information on banks' positions could be obtained either by introducing further reporting requirements, which are limited in that they do not necessarily encourage agents to report all the relevant information but just that which is required, or by using surveys, which are more costly in terms of processing.

2|3 Reinsurance

Reinsurance can be defined as the acceptance by an insurer of some or all of the risk underwritten by another insurer. The insurer is solely responsible for the financial obligations under the policies it issues; the reinsurer only takes on some or all of the cost of the risk when it materialises. Pursuant to the provisions of the reinsurance treaty, the sharing of risk with the reinsurer may be proportional (in 80% of treaties in the case of automatic reinsurance) or non-proportional (in 16% of treaties, the remaining 4% being accounted for by facultative reinsurance). Non-proportional reinsurance is also known as excess of loss or stop-loss reinsurance. In the case of excess of loss reinsurance, the reinsurer grants cover for those claims that exceed a certain fixed amount but are still below a defined upper limit. In the case of stop loss reinsurance, which is rarer these days, the reinsurer covers the share of the insurer's annual losses over and above an upper limit and, possibly, below a certain fixed amount.

Reinsurance has often been considered a potential source of systemic risk within the insurance sector for the following reasons:

• reinsurers rarely retain all the risk they underwrite: in general, they retrocede part of the risk to one or more reinsurers, thus fuelling a "spiral of retrocessions"; this constitutes a potential source of contagion in that, in the same way as interbank lending, it ties together all the players in the sector, and if one reinsurer fails it is likely to affect the whole sector;

• the complexity and, in the case of non-proportional treaties, the non-linearity of risk sharing with the insurer and the fairly systematic intervention of courts in major claims, makes it difficult to assess the actual exposure of reinsurers. Often, it is only possible to determine the liability of the different parties several years after the event has occurred;

• reinsurers underwrite the most volatile parts of the risk, *i.e.* those corresponding to peak exposures. The latter come into play when insurers are under

[7] *For France, see:* Commission bancaire, Commission de contrôle des assurances *and* Autorité des marchés financiers *(2004).*

pressure or are getting into difficulties. This is discussed in a study by the ratings agency Moody's, which shows that troubled insurance companies have on average two-and-a-half times as much exposure to reinsurance as their peers;[8]

• the reinsurance market is highly concentrated, with the top five reinsurers accounting for 57% of the world market share and the ten largest reinsurers representing 77%; by means of comparison, the same ratios on the French market for insurance groups are 42% and 62% respectively;

• as we have seen, reinsurance is at the heart of debate on credit risk transfer. Moreover, reinsurance is the keystone of many insurance groups, even though, in these cases, they often limit their activity to intragroup reinsurance;

• lastly, reinsurers have taken on a key role in certain types of coverage, associated directly or indirectly with professional civil liability. As recent events have shown, such as the attack on the World Trade Center, a sudden withdrawal of reinsurers is likely to seriously disrupt economic activity.

However, the fears of systemic risk arising from reinsurance are probably unfounded:

• no examples of a systemic crisis originating from the failure of a reinsurer have been observed. The Piper Alpha Platform disaster, which sent shockwaves through the insurance markets, raising fears as to a collapse of the market, was finally absorbed. Likewise, the reinsurance industry has managed to overcome, without major defaults, the huge and complex claims due to asbestos, the World Trade Center attack, the world recession and the slump in the financial markets;

• the sums involved are not so great as to seriously jeopardise financial stability. In effect, reinsurance only accounts for a small share of direct insurance premiums: 4% on average, 8% of non-life premiums and 1% of life premiums (8% if we strip out savings-related premiums). Losses arising from reinsurer bankruptcies only average 0.24% of freely ceded premiums (see SwissRe, 2003);

• insurers are increasingly diversifying their reinsurance cover; Swiss Re treaties in Europe reveal that only 10% of ceded premiums come from companies that entrust more than 50% of their reinsurance cessions to Swiss Re and that 50% of premiums come from companies that entrust less than 20% of their cessions to Swiss Re. It should be noted that only 5% of reinsurer bankruptcies triggered major problems for primary insurers (see SwissRe, 2003);

• the fact that reinsurers take on peak risks is offset by the geographical diversification in terms of risks and investments;

• risks relating to the retrocession spirals should not be overstated; losses stemming from such spirals only amount to USD 1 billion worldwide, or just 5% of total retrocessions, 1% of reinsurance premiums and 0.04% of direct insurance premiums;[9]

• lastly, most of the temporary and permanent withdrawals of reinsurers, which significantly affected activity, had such effects only because the State imposed insurance obligations without taking into account the solvency of the insured parties concerned (doctors, airline companies, etc.).

In view of reinsurance's particular characteristics, the risks it poses to financial stability deserve special attention. In this respect, the draft directive aiming to subject European reinsurers to prudential supervision and in particular to impose a solvency margin equivalent to that of the underlying insurance risks should significantly reduce the risks associated with reinsurance.

3| REGULATION TO COMBAT INSTABILITY IN THE INSURANCE SECTOR

The regulation of the insurance sector aims to protect the interests of consumers and investors and thus ensure financial stability. However, there are cases where some regulations may contribute, at times, to destabilising a sector such as the insurance sector, with consequences that could reach beyond the sector. Such problems exist both in the prudential regulation of the insurance sector and in accounting and product regulations.

[8] *See Moody's Investors Service, Special Comment (2003).*

[9] *See SwissRe (2003). This calculation is made assuming an original loss expectation of 80% of the premiums and that all retrocessions are indefinitely transferred at a constant retrocession rate of 21% and that the average commission rate is 20% at each stage.*

3|1 The prudential regulation of insurance companies

Recent experience has shown that a number of prudential arrangements, which are both legitimate in principle and effective in everyday situations, may prove inappropriate in extreme situations, as they could encourage insurers to withdraw inopportunely from the risks in question.

For example, the provision known as the liability risk provision, which required insurers to make provisions for losses on their equity and property portfolios, suddenly amplified the shock in July 2002 when market participants' pessimistic expectations about equity markets proved correct. Insurance companies realised that as long as the market continued to slump, they could no longer carry on financing the liability risk provision without raising capital at the worst time, *i.e.* at a time when the supply of capital had dried up. They could only raise capital at a huge cost or at times not at all. Therefore, these companies had no other choice but to sell their shares at a loss so as to limit their losses to the level they had already reached. Consequently, they sold these assets despite the fact that the long-term nature of their liabilities meant that they should have been buying during a downturn that they judged to be temporary.

This is an example of a regulation that, beyond a certain limit, *i.e.* when companies started to fear raising capital, becomes a shock amplifier. In this instance, the shockwave was violent. At the end of 2002, government authorities reacted and amended the detrimental regulation, thus allowing the equally sharp decline in equity markets of Q1 2003 to be absorbed with greater flexibility. More generally, a number of prudential regulations concerning the insurance sector are likely to change in nature above and beyond a certain limit and suddenly become destabilising not only for the sector but also for the market as a whole.

It is important to contain the potentially destabilising effects of these mechanisms, which are often linked to the excessive procyclicality that such mechanisms may exhibit under certain circumstances. As these mechanisms cannot all be corrected, given that prudential rules are not always compatible with a variable geometry approach, it would be appropriate in the future to provide for an *ad hoc* system for dealing with such problems as they arise. Given that it is the consequences of these mechanisms for the economy as a whole and not the consequences for the insurance companies themselves that must be kept under control, such a system would probably best be managed by a national authority, or even by a European body in charge of overall economic policy, above and beyond all other specific measures that may be taken, according to the circumstances, by regulators and supervisors.

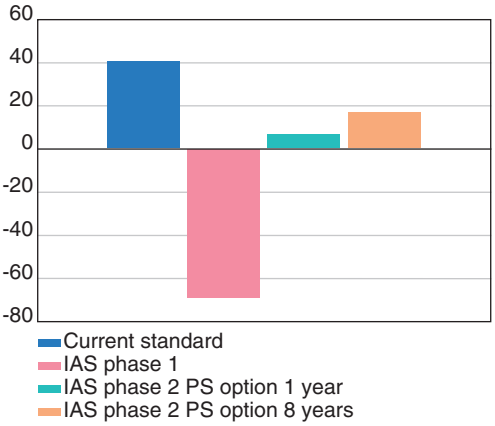
3|2 Accounting regulations

Accounting standards aim to protect the interests of investors and the market, which may be destabilised by a lack of transparent financial information. International and cross-sector comparability of accounts is vital for this transparency. Hence the new international accounting standards based on the fair value principle which are set to replace current local accounting standards based on the historical cost principle. However, the new accounting standards, which will temporarily apply as of 1 January 2005 to insurers' consolidated accounts, could foster financial instability in the insurance sector for the following reasons.

• These transitional provisions are inconsistent in that they do not apply the same accounting philosophy to liabilities and assets: liabilities will continued to be valued at historical cost, whereas assets will be valued at fair value. They constitute an autonomous source of volatility that could be even more disruptive given that we will be in an extreme situation, as Chart 3 below shows. This Chart gives the results of the simulation of a sharp rise in interest rates during the transition phase, known as Phase 1, for both the current historical cost accounting framework and the future accounting framework where liabilities will also be at valued fair value. It clearly shows the atypical reaction of the accounts during this transition period.

• The new accounting standards do not recognise the economic and financial realities of the insurance industry. They do not allow for the possibility of booking assets in the same way as liabilities when they are used for covering these liabilities, as is the case in insurance. They ignore the concept of asset and liability portfolios, even though the whole

Chart 3
Net equity of the French life insurance market in 2002 in the event of a 400 bp rise in interest rates
(in EUR billion)



Interpretation: following the simulated rise in interest rates, French life insurance companies' net assets are likely to stand at EUR 40 billion under French accounting standards, EUR –70 billion under IAS Phase 1 and EUR 5 billion or EUR 15 billion under IAS Phase 2, depending on whether the profit-sharing is paid one year or eight years after these profits are generated.

Source: FFSA

insurance industry relies on the pooling of risks within sufficiently diversified portfolios. Lastly, they ignore peak risks and their intertemporal pooling, which are central to disaster insurance.

• IAS standards introduce, for the transition phase alone, a multiplicity of options that leave much discretion to the compilers of accounts. Consequently, compared to the present situation, not only the comparability of insurance companies' accounts will not be improved at the intersectoral and international levels (if there is no transatlantic convergence), but it will even worsen at the national sectoral level.

Even if we do not assume that there is a certain accounting illusion, it is difficult to imagine that these problems will not be without impact on the stability of the insurance sector. In the coming years, these problems may prove to be a recurrent source of financial instability for European markets.

3|3 The regulation of products

The aim of regulating products is to protect insured parties. This regulation should not have consequences, especially detrimental ones, for economic activity. However, this may be the case when it imposes constraints that are unrealistic in view of market conditions. A textbook case would be where it was made compulsory to cover an uninsurable risk (*i.e.* a risk that has no known probable maximum cost): no insurer concerned about its long-term solvency and its credibility among policy holders would take on such a risk. Less directly, by subjecting one or more activities to such unrealistic constraints, regulation may result in the collapse of the market and of the activities in question, or even disrupt economic activity. In particular, this is the case when government authorities make insurance compulsory for insured parties who are not willing to pay the actual cost, as illustrated by the current difficulties in obtaining coverage experienced by members of the medical profession in France. A judge, by his/her decision, may cause the collapse of entire segments of the insurance market, with possible deleterious consequences for the economy. This would be the case for example if he/she fundamentally changed, *ex post facto*, the obligations of existing contracts, as illustrated by insurers' reservations over covering asbestos risk (in the light of class actions brought in US courts) or gynaecological risks (following the Perruche decision in France).

The insurance market, which is complex by nature, struggles to adapt to too much intervention. Indeed, the risk insurers bear is volatile and difficult to comprehend and must be treated with great caution: this is a prerequisite for upholding the confidence on which professionals count in order to be able to continue offering coverage without difficulties. Most of the temporary or long-term problems that have arisen in the past few years can be attributed to such interventions and not to financial difficulties or even the bankruptcy of certain insurance firms.

All in all, although we cannot deny that the difficulties of some insurance companies may result in major economic or financial disruptions, the fact remains that insurance and reinsurance do not appear to constitute, in themselves, an actual source of systemic risk or even of serious financial instability. In fact, everything indicates that they act as shock absorbers. They only appear to become a source of instability in very specific conditions, independent of insurance itself. We should therefore not underestimate the risks associated with certain changes observed in this sector. At present, the response of European regulators is probably appropriate for the nature of these risks. However, in addition, it would be advisable to:

- *accelerate European reforms of insurance solvency regulation,*
- *scrutinise the coordination and the consistency of the supervision of financial conglomerates,*
- *collect more comprehensive data on credit risk transfers,*
- *mitigate the risks of instability related to the existing prudential framework,*
- *provide for an insurance crisis management procedure at the macroeconomic level,*
- *encourage the IAS Board to improve the quality of the standards applicable to insurance,*
- *consolidate the legal environment for insurance as much as possible.*

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